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<p>Substitute for form 1449/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>(Use as many sheets as necessary)</p>		Complete if Known	
		Application Number	10/658,157
Filing Date	September 9, 2003		
First Named Inventor	David L. Neary		
Art Unit	1724		
Examiner Name	Robert H. Spitzer		
Attorney Docket Number			

U. S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

Examiner Signature	Robert H. Spitzer	Date Considered	May 4, 2004
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Page 2 Attachment to 'INFORMATION DISCLOSURE STATEMENT BY APPLICANT'
(Submitted by David L. Nary on September 9, 2003)

Patent Number	Figure Reference	Stated Objectives	Other References
5,114,440	2	Col. 1 lines 45-49 to discover a process of favorable energy	Col. 1 lines 49-64 detailing VSA approach to satisfy the objective.
5,538,544	1-5	Col. 2 lines 34-36, and 37-40	Col. 2 lines 52-55 to achieve a very uniform gas flow at the gas flow's entrance into the adsorbent bed.
5,656,068	2 and 3	Col. 3 lines 52-54 and 55-59 (lowering VPSA power consumptions)	Col 3 lines 38-51 acknowledging inefficient and uneconomical present art VPSA systems for larger oxygen plant outputs.
		Col. 5 lines 27-30 "power savings of about 20% is contemplated".	Col. 7 lines 8-13 use of radial beds in embodiments of the invention. Col. 10 lines 58 to Col 11 line 5 referencing to advantages of radial-flow beds with vertical adsorbent beds.
5,658,371	8-15	Col. 3 lines 34-36, 37-40,41-45 (collectively enabling higher efficiencies)	Note: improved scheduling of sequenced steps applies to single conventional vertical vessel beds and employed single compressor for adsorption/desorption.
5,674,311	5	Col. 3 line 11-19 method of selecting adsorbents for multiple thermal levels within conventional VPSA vertical vessels containing deep adsorbent beds.	Col. 2 lines 41-55 outlining the development of thermal gradients across deep adsorbent beds
5,759,242	1-4	Col. 2 lines 28-31 , 32-34, 35-38, 39-44 (collectively to reduce required adsorbent material, improve gas flow distribution, and reduce power consumption within conventional vertical vessel VPSA systems).	Col. 2 lines 13-27 describing previous art of employing radial-flow adsorbent beds.
5,964,259	1 & 2	Col. 2 line 42 to 67 (improved method of loading a conventional vertical VPSA adsorber vessel with two or more layers of varied adsorbent materials having radial flows of gases.	Note: complex adsorbent loading arrangement for an internally complex (and expensive) fabricated vessel, said loading and vertical bed heights being not well suited for fragile adsorbent materials. Design is not suited for on-site change-out of adsorbent materials.
6,334,889B1	1 & 2	Col.4 lines 6-10, and 11-15 (reduction of adsorbent bed fluidization and void space volumes within a typical vertical VPSA adsorber vessel)	

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